

Organizational/ systems skills	Definition
17. Use of evidence-based knowledge	An explicit approach to health care practice in which the health professional is aware of the evidence that bears on their practice, and the strength of that evidence. This includes the risks and benefits of any intervention including self-management support. This approach to decision making involves the health professional using the best evidence available, in consultation with the patient, to decide upon the option which suits that patient best (Muir 1997). Most evidence-based guidelines are disease specific. However, co-morbidity is common among people with chronic conditions. Therefore, it is important for evidence-based knowledge and practice to acknowledge this complexity.
18. Conducting practice based research/ quality improvement framework	Undertaking practical research or evaluation in the field that can be used to inform everyday practice and improve the delivery of service to patients. Measures may include patient or health professional rated self-efficacy, self-management behaviours, patients' health-related quality of life, health service utilization, patient/carer satisfaction with the service, service costs, or specific disease measures. This practice-based research provides services with a strategic overview of the key principles and practices necessary for the effective monitoring, management and improvement of their health services. The Plan, Do, Study, Act (PDSA) cycle is one mechanism for undertaken this research in practice (Victorian Quality Council 2005).
19. Awareness of community resources	Broad understanding of available resources, supports, services and activities within the patient's community that would be useful in supporting them and their carers/ family. This involves an understanding of what the services involve, how to access them and their appropriateness in being able to meet the patient's and their carer's identified needs (Wagner et al. 2001).

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# 10 Knowledge and reasoning in practice: an example from physiotherapy and occupational therapy

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## Introduction

In this chapter we describe the nature and sources of knowledge used by physiotherapists and occupational therapists in their daily clinical work. We have chosen to integrate our discussion of knowledge with a discussion of clinical reasoning reflecting the current understanding that knowledge and reasoning are inherently related in clinical practice (Higgs and Jones 2008). To illustrate the nature of knowledge and clinical reasoning used by these caring professions, we present an example of a client following a stroke. We conclude that the knowledge and reasoning processes used by these professions include shared and distinctive elements reflecting a close relationship between two professions that maintain defined and separate roles in health practice.

Physiotherapy (or physical therapy) is a healthcare profession which focuses on the restoration of movement. The World Confederation of Physical Therapists (WCPT) has defined physiotherapy in the following manner.

Physical therapy provides services to individuals and populations to develop, maintain and restore maximum movement and functional ability throughout the lifespan. This includes providing services in circumstances where movement and function are threatened by ageing, injury, disease or environmental factors. Functional movement is central to what it means to be healthy.

Physical therapy is concerned with identifying and maximising quality of life and movement potential within the spheres of promotion, prevention, treatment/intervention, habilitation and rehabilitation. This encompasses physical, psychological, emotional, and social well being. Physical therapy involves the interaction between physical therapist, patients/clients, other health professionals, families, care givers, and communities in a process where

movement potential is assessed and goals are agreed upon, using knowledge and skills unique to physical therapists. (WCPT 2009)

Occupational therapy is a healthcare profession that focuses on using purposeful activity to assist people to restore function. The World Federation of Occupational Therapists (WFOT) defines occupational therapy in the following way:

Occupational Therapy is a healthcare profession based on the knowledge that purposeful activity can promote health and well-being in all aspects of daily life. The aims are to promote, develop, restore and maintain abilities needed to cope with daily activities to prevent dysfunction. Programs are designed to facilitate maximum use of function to meet demands of the person's working, social, personal and domestic environment. The essential feature of occupational therapy is the active involvement of the person in the therapeutic process. Occupational therapists receive education in social, psychological, biological and medical sciences, professional skills and methods. Fieldwork studies form an integral part of the course. (WFOT 2008)

Occupational therapists work with a wide range of people, in both the physical and psychosocial areas of health and well-being. Occupational therapy process is based on assessment of the person's abilities, social support, environment and any issues that hinder the person in their daily life. The intervention process is person orientated as well as environmentally orientated (WFOT 2008).

## A case study from clinical practice

Throughout this chapter we refer to the story of Albert during his rehabilitation journey following a stroke. Physiotherapists and occupational therapists (OT) work independently with Albert and also collaborate as team members sharing in his care.

Albert is 63 years old and has suffered a stroke affecting the left side of his body. In the first two weeks after the stroke he had low tone with little movement on his affected side. His state of consciousness was poor. He felt very tired and weak and was not able to move independently in his bed. He recognized his wife and could answer simple questions but was too confused to have a conversation. He was not aware of his health condition. During this time his neurological problems were compounded by the development of pneumonia. He was at risk of dying and his family was afraid.

At the end of this acute phase his level of consciousness had improved, he was no longer confused and his pneumonia had resolved. He understood he had had a stroke but he didn't comprehend what it meant. He expressed a need to move in his bed, to be able to sit in the bed and to go to the toilet, and expressed his frustration at being unable to independently complete these activities. The nurses, physiotherapists and occupational therapists involved in his care suspected that he had unilateral spatial neglect because he had difficulties perceiving the left side of his body and the left side environment. After two weeks he was transferred to a rehabilitation unit.

On arrival at the rehabilitation unit Albert was evaluated by the OT and physiotherapist. Assessments used were observational assessment of mobility, tone, position, upper limb, use of wheelchair and visual perceptual assessment. This assessment determined that he was able to mobilize with the maximal assist of two, he could sit independently, sit to stand with the assistance of one and could stand unaided for five seconds. His left arm remained flaccid and he was unable to reach, grasp or hold objects.

The final goal of rehabilitation was to return Albert to his home. Albert had been a truck driver for a local firm and was intending to retire soon. He had worked with the firm for ten years and drove within set regional boundaries. He lives with his wife in a regional city. His wife is 60 years old and suffers from arthritis in her hands, knees and feet. He has three adult children and four grandchildren. His adult children live within a radius of a one hour drive of his home. His social life is centred on his workmates. He spends his lunch hours playing cards and talking to workmates and goes to the pub with his workmates every Friday evening. He has no other friends outside work. Albert lives in a two-storey home with ten external stairs and seven internal stairs. The kitchen, lounge area and garage are downstairs. There is a yard with front and back garden. The home is in walking distance to a local shopping centre, bus and train stops. Albert previously spent his time outside of work hours with his family and/or watching TV. He tends a small vegetable garden in his backyard at home with his wife.

Albert spent four months in the rehabilitation unit. He was discharged home. On discharge he was able to walk inside his home without falling but could only walk outside if the ground was flat. He could not use his left arm efficiently and could not drive because of some remaining perceptual impairments.

## Physiotherapy knowledge and clinical reasoning

Physiotherapy practice in Albert's care would begin in the acute care setting with a focus on his respiratory health as affected by pneumonia, as well as the variations to his movement ability. Once Albert recovered from this acute phase and entered the rehabilitation phase the physiotherapy emphasis would shift to his movement function. His rehabilitation would typically involve an initial comprehensive assessment of his movement ability. For example, is he able to move himself from lying in bed to sitting independently on the side of the bed, walk independently and reach for and manipulate an object such as a cup? Physiotherapists interpret assessment findings against their knowledge base to diagnose any movement abnormalities and select rehabilitation strategies to facilitate the optimal recovery of movement activities needed for quality of life.

Research investigating clinical decision making by physiotherapists in acute care settings indicates that practitioners use a knowledge base that is multidimensional in nature, consisting of multiple knowledge types derived from multiple sources (Smith et al. 2007). Building on the work of Vico, an approach was presented by Higgs and Titchen (2001) on the categorization of knowledge that differentiated between propositional and non-propositional forms of knowledge used in healthcare practice. *Propositional knowledge* refers to knowledge arising from theory and research. In the case of Albert this would refer to knowledge of areas of the brain responsible for particular movement functions and the implications of impaired blood supply to this region. Propositional knowledge can consist of facts and concepts, knowledge of theories underpinning their practice, and knowledge of published clinical research. It is apparent that this knowledge is not drawn from a body of knowledge confined to the discipline of physiotherapy; rather, physiotherapists draw upon a collective knowledge base relevant to all health professionals. How physiotherapists interpret and incorporate this knowledge into their clinical reasoning processes may, however, be distinct to their profession.

*Non-propositional knowledge* refers to experiential knowledge. Higgs and Titchen (2001) differentiated this type of knowledge into professional craft knowledge and personal knowledge. *Professional craft knowledge* refers to knowledge arising from professional experience while *personal knowledge* is knowledge that an individual acquires from personal life experience. In the case of Albert, the physiotherapists involved in his care could have knowledge of characteristic features of unilateral spatial neglect and how that manifests itself in individual clients and their response to physiotherapy rehabilitation strategies. Personal knowledge would refer to the knowledge an individual physiotherapist might hold about what it is to experience fear for a loved one who is ill.

Research conducted in acute care settings (Hedberg and Sätterlund Larsson [2004] studying nurses and Smith [2006] studying physiotherapists) has found that professionals have knowledge that is applied for different reasoning purposes. These different types of knowledge include procedural knowledge (or how to perform certain skills), comparative and predictive knowledge, situational or contextual knowledge, and social and interpersonal knowledge. This knowledge allows them to manage the particular context in which they work. Applying this to Albert's case reveals that physiotherapists could draw upon:

- Procedural knowledge, which would inform physiotherapists how to transfer Albert from bed to chair safely by providing appropriate support and instructions and knowledge of the optimal placement of a chair. This knowledge could be constructed from knowledge of the mechanics of normal movement but also experience of how to organize optimally the task to ensure a safe and efficient transfer.
- Comparative and predictive knowledge would refer to knowledge used to compare Albert's presentation with other clients following stroke and to determine his likely progress. Practitioners would have a sense of how Albert related to 'normal'. This type of knowledge could also be used to predict Albert's likely response to particular interventions.
- Situational or contextual knowledge could involve knowledge of the location of resources that could be used in therapy and the optimal timing of therapy in relation to other activities being undertaken in the rehabilitation unit. This would also involve knowledge of others who work in their context.
- Social knowledge would refer to knowledge of other team members as people and also health professionals, their roles and responsibilities and how to interact and work effectively together to achieve effective outcomes. This knowledge and its application is important for occupational therapists and physiotherapists collaborating effectively together.
- Interpersonal knowledge would relate to understanding Albert and his family and their response to his condition and how it might impact on his life.

The literature also makes reference to intuitive and tacit knowledge as types of knowledge relevant to healthcare practice. Some argue strongly for the presence of intuitive knowledge and judgement, defining intuition as 'understanding without rationale' (Benner and Tanner 1987: 2) where this understanding is a 'gut feeling' (Titchen and Errser 2001: 36). Others refute the idea of intuition being simply labelled inexplicable, suggesting,

rather, that it is knowledge of which practitioners are currently unaware, as it has become deeply integrated into practice and professional judgement (Higgs and Titchen 2001). A related term is tacit knowledge, which refers to Polanyi's idea that 'we know more than we can tell' (Polanyi 1958: 27). It is possible that in Albert's case practitioners used a high level of these subconscious or unarticulated types of knowledge to inform their practice.

The discussion so far has alluded to the dimensions of physiotherapy clinical reasoning. In this section we specifically review the current understanding of physiotherapy reasoning as relevant to Albert. Research investigating physiotherapy clinical reasoning indicates that physiotherapists use a range of reasoning strategies that vary according to the nature of the task and context (Edwards 2004, Smith 2007). Edwards (2004) portrays these categories as reasoning about diagnosis and reasoning about management. Reasoning about diagnosis includes diagnostic reasoning and narrative reasoning. In the case of Albert, this would involve a diagnosis about the nature of his physical and functional impairments. This aspect of reasoning would draw on propositional knowledge such as the impact of his neurological pathology on function, and comparisons between Albert's movement ability and movement function under normal circumstances. Narrative reasoning relates to developing an understanding of the client's illness and disability experience. As we have noted in the case, this is expressed by Albert in terms of his frustrations and goals. Edwards and Jones (2007) also describe physiotherapy reasoning as dialectical in nature, as practitioners move between biomedical aspects of clients' condition and situations and narrative aspects. As we will note later, narrative reasoning is an aspect of reasoning shared by both physiotherapists and occupational therapists, as is this notion of a dialectical process in reasoning.

Physiotherapy reasoning has been found to involve the cognitive processes of hypothetico-deductive reasoning and pattern recognition. These processes of reasoning are underpinned by a knowledge base organized for practice that enables practitioners to recognize and interpret the nature of the presenting problem and its meaning for the client and their outcome. The source of this knowledge can be propositional in nature but is also dependent on professional craft knowledge critically derived from experience. Jones (2008) also highlighted physiotherapy as a collaborative process involving clients, where clients' reasoning about their own condition is incorporated with the physiotherapist's. Undertaking this collaborative process would require practitioners to access their body of personal knowledge to inform their relationships with people and to understand clients' experience of their illness and loss of function.

The second major aspect of reasoning identified by Edwards (2004) was reasoning about management, where this encompasses reasoning about procedure, interactive reasoning, collaborative reasoning, reasoning about

teaching, predictive reasoning and ethical reasoning. These many aspects of reasoning are integrated by physiotherapists as they make and implement decisions to bring about changes in movement function and support clients' skills of self-management and understanding of their condition. In the case of Albert this aspect of physiotherapy reasoning would be seen in the practice of structuring therapy activities to address his difficulties with functional activities such as standing up from a chair and walking.

Physiotherapy reasoning is affected by factors in the context in which it occurs and by factors that are related to physiotherapists themselves (Smith 2006). Smith found that physiotherapists in acute care settings were affected by physical, social and organizational factors. Clinical decision making by acute care physiotherapists was unable to be separated from the context in which it occurred. Indeed clinical reasoning involved the incorporation of contextual features as an integral component of the reasoning process. For example, in the case of Albert decisions about activities such as which therapy activities to use could require consideration of contextual factors such as the physical environment and equipment available, social factors such as other health professionals and clients and their actions, and organizational factors, such as workload and priorities. Smith (2006) also found that decision making was affected by factors relating to the practitioner based on their unique frames of reference.

## Occupational therapy knowledge and reasoning

Occupational therapists have formal knowledge about the diagnosis and its potential impact on skills and functions and can describe the client's assets and limitations in relation to the diagnosis (Rogers 1983). In Albert's case, during the acute phase, information required by the occupational therapist would be obtained through observation and concrete techniques or procedures. For example, consideration would be given to Albert's bed mobility, sitting, eating, and bowel and bladder control.

In the rehabilitation phase, the occupational therapist undertakes assessments to measure motor, sensation, visual perceptual skills and performance in basic or instrumental activities of daily life. These assessments, for example, the Canadian Occupational Performance Measure (Law 1998b), assist the therapist to set goals and objectives, to measure progress and to decide the best treatment options. These goals centre on restoring or modifying the occupations that are identified by Albert as meaningful to him. Through this collaboration between the occupational therapist and Albert, the therapist is working in a client-centred approach (Law 1998a). In conjunction with the client, the therapist identifies the client's limitations and resources, and this leads to the setting of specific,



measurable, achievable, realistic and timely objectives. These objectives can be set according to the occupational therapist's knowledge about stroke and its impact, for instance, how to move in one's bed, then to dress oneself with a one-hand technique, or to perceive one's environment on the left side, and to prepare a sandwich.

The occupational therapist also uses knowledge about frames of reference, models and methods recommended to remediate or to compensate for limitations due to stroke. The occupational therapist's unique contribution is, according to a classical operative principle, to work with clients on tasks that encourage them to use personal factors (skills, performance components, functions) that must be trained or recovered (Crepeau 2003, Meyer 2007). These tasks are often clients' occupations in daily life, for instance, in Albert's case, to deal out playing cards, to pick the cards off the table, then hold them in the left hand and manage his left visual field neglect (Wilby 2007). These tasks must meet the client's volitional needs otherwise the motivation to engage in them will be low. These tasks can also assist the client by progressive re-training of skills, for instance skills involving the mobility of the left arm. From one session to another, exercises requiring higher levels of functioning (for example, global grasp, then fine grasp) or combinations of skills are offered (for example, to bend, to seize, to lift, to manipulate with both hands). In the end they lead to performances in activities (for example, to fill a cup of tea, to answer a phone call). The approach is called 'bottom-up' when successive functions are trained in order of complexity to achieve functioning in the performance of activities or occupations. It is named 'top-down' when functional activities are used to train functions or skills (Schell 2003).

After discharge, Albert's intervention includes home visits and modifications to fit out the home environment so it is more suitable for Albert's needs, choosing, buying and learning how to use technical aids that assist in daily occupations, as well as modifications or reorganization of everyday occupations. Usually this stage of recovery requires a home visit to decide on modifications that are essential if the client is to return home. The basis of these actions is influenced by the occupational therapist's formal medical and professional knowledge of stroke, assistive technology, environmental adaptation for safety and accessibility, task organization, and social participation because this knowledge assists the client to understand and face up to the impact of the disability in his or her occupational performances. The occupational therapist also discusses problems with the client and his family and decisions are negotiated with them (Woodson 2008).

In occupational therapy, the intervention focus is the human condition of the client to enable them to move from a situation of major disability to a situation of social participation through new, modified or recovered

occupations. In order to do this, occupational therapists use clinical reasoning, which is a complex process of thinking and decision making, associated with professional action. Clinical reasoning underlies the intervention process and helps the therapist in specific contexts to obtain the necessary data, to cooperate with clients, to identify problems that need intervention, to set objectives, to plan sessions with clients and others, and to carry out and adapt treatment activities according to clients' feedback (Benamy 1996, Chapparo and Ranka 2000). In this process, different forms of clinical reasoning – some explicit, others tacit – have been demonstrated (Mattingly and Fleming 1994). Explicit reasoning is directed by theory but tacit thinking is more intuitive and based on common sense, personal or professional values and culture as it is taken for granted. The use of the different forms of reasoning varies according to therapists' experience and the characteristics of the tasks (Sinclair 2007).

Explicit forms of reasoning are used to assess and act upon while considering the client's health condition and the impact this condition has on performance and skills. Explicit forms of reasoning are practised on biomedical contents or contents belonging to the classical operative principle of occupational therapy. In Albert's case, explicit forms of reasoning are based on assessment which provides specific knowledge of Albert's motor, sensory and perceptual limitations due to stroke. This knowledge assists the therapist in choosing appropriate models, methods and techniques for Albert.

Explicit reasoning is sometimes called scientific reasoning (Tomlin 2008). 'Scientific' means that the therapists are guided by theory, think logically and use hypotheses, deduction and induction, and are able to give some rationality to their decisions (Rogers 1983, Rogers and Holm 1991). During the assessment, this reasoning goes through five stages: iterative: cue acquisition, hypothesis generation, cue interpretation and hypothesis evaluation (Rogers and Holm 1991). In the end, the therapist develops an understanding of the client's performance components and skill limitations. Scientific reasoning can also be deductive, comparative and inferential, and can be used in deciding on the intervention task, grading activity or environmental organization (Tomlin 2008). For instance, in Albert's case, the therapist assesses the motor function of Albert's left arm, and then analyzes the motor functions necessary to shuffle playing cards. He or she compares these functions to those Albert presently has and deduces how to implement the activity 'shuffling play cards'. The therapist decides that this activity has an interest according to treatment objectives and decides to offer this activity as an opportunity during a treatment session. This type of explicit reasoning is frequently held by novices.

Therapists who encounter novel situations process in a hypothetico-deductive manner, rather than the faster process of pattern recognition

(Higgs and Jones 2008). More experienced practitioners get a quick image of performance, function, skills limitations and their clients' assets by recognizing discreet signs that are particularly eloquent for them. They judge rapidly what action needs to be undertaken (Robertson 1996). In their case, assessment tools serve to document the case for others. Unfortunately, therapists who operate in this way are only partially able to explain what they do and how they arrive at decisions and they justify their decisions in a way not always congruent with the followed rules (Harries 2007). These therapists although typically more accurate can make errors due to, for instance, too few observations or an overestimation of some pieces of information (Tomlin 2008).

During assessment and intervention sessions, the expert therapists know how to subtly adjust their action to the client's response (Sinclair 2007). Usually the expert's reasoning is more intuitive than the novice's. Their clinical process mixes assessment and treatment moments and seems less logical when compared to a biomedical model. For some therapists, such expertise endows the process with more discernment. In a complex, uncertain and changing situation, they manage better than novices because they can consider all the parameters of a situation and know better how to reconcile motivational, volitional, functional and relational aspects relating to the client. Nevertheless, the expert therapist is partially unaware of his or her own mental process and can also forget important cues that would contradict his or her usual way of perceiving (Harries 2007).

### **Interactive knowledge (interpersonal knowledge)**

Besides scientific or procedural reasoning, which is usually explicit, there are forms of reasoning that are qualified as anti-positivist because they concern reasoning that focuses on the understanding of the client as a person in a context. These forms of reasoning are intended to face the hazards of the therapeutic relationship. They give meaning to the intervention not in relation to the disease or disability but to illness as it is experienced by the person (Mattingly and Fleming 1994).

During sessions, occupational therapists are involved in interaction with clients not only from the rehabilitation and functional perspective but also from the perspective of clients' experience of illness, disability and emotions. They adjust their behaviours, discourses, rate of sessions, activity choices, verbal and non verbal feedback according to their perception of what is happening in the interaction (Fortmeier and Thanning 2002). This kind of thinking helps to engage clients in sessions, finely adapt objectives and therapeutic strategies and give to the person a feeling of self-confidence and trust in the occupational therapist's competences. Interactive reasoning in the interaction creates a shared language between therapists and clients

(Mattingly and Fleming 1994). With this reasoning, the occupational therapist can understand what Albert endures as he has lost his capacity to drive his truck and what he experiences while slowly recovering his capacities.

In parallel with the therapist's considerations of the interaction between the client and themselves, therapists are also thinking and talking to themselves about what is happening during the sessions and in the client's life. In relation to the context of the client, the occupational therapist reflects upon the client's human condition and imagines the person in their future life in order to lead the intervention towards the best possible outcome. For instance, the therapist asks him- or herself if it is desirable for Albert to continue to see his workmates in the pub and, if the answer is yes, how to adapt therapy to make that possible. Mattingly and Fleming (1994) describe this knowledge as implicit, but further research has found that this type of reasoning is probably less implicit than thought, with occupational therapists being able to manipulate reasoning through their own reflexive practice (Boyt Schell 2008). Client-centred practice or new frameworks, guide therapists to be more aware of what kind of experience and emotion they produce in clients during sessions.

### **Pragmatism and values**

Occupational therapists' clinical reasoning and decisions are also influenced by their work context or even their personal context (Boyt Schell 2008). Personal or professional values also have an impact on treatment (Chapparo and Ranka 2000).

Occupational therapists think in a pragmatic way when they decide how to adapt an intervention to the context of an interdisciplinary team, the clients on their caseload, the duration of sessions or the entire process of rehabilitation, the available equipment in the unit, hospital norms, cost containment, and the national healthcare system. For instance, if Albert's therapist cannot visit his home, they cannot observe the environment and must discuss this issue with him and his family. They must imagine how it is, and ask appropriate questions and give advice without being able to see the actual context. Pragmatic reasoning has also to do with the occupational therapist's knowledge and expertise, because therapists can only use competences they possess. Pragmatic reasoning resembles conditional reasoning but it has more to do with the occupational therapists' internal and external context and not the client's context.

Occupational therapists as professionals and human beings in a specific culture have values that influence their intervention. For instance, occupational therapists value autonomy and independence, engagement, client-centred practice and equal access to healthcare. Perception of a

situation or a person is also influenced by these values. Reasoning held on the basis of such an ethical point of view is ethical reasoning (Meyer 2007). Ethical reasoning is intended to judge what it is that is 'good' to do in a situation (Schell 1998). It is possible that what is considered as 'good' for an occupational therapist may not or cannot be considered as 'good' in a hospital and that the therapist may have conflict with other professionals or face an ethical dilemma. Rogers, in 1983, stressed that the final decision about what ought to be done in an intervention is making an ethical decision. Things have not changed if evidence-based practice does not recognize that the final decision must take the client's opinion and expertise into account: clinical decisions must be based on ethical thinking.

### **Narrative thinking**

Opposite to scientific reasoning, the occupational therapist guides their process through storytelling. They tell stories to themselves and to their colleagues. They build the story with the client. Narrative thinking helps therapists to capture a client's multiple dimensions and to organize them in time and space. Narrative thinking also assists in understanding complex situations and gives meaning to what happens during intervention. With narrative reasoning, therapy becomes a story taking place in time, with difficult and easier moments, with failure and victories, full of challenges (Mattingly 1998). In Albert's case, this form of reasoning helps to set goals, to understand how he might participate in society and manage after discharge.

Narrative reasoning is probably used with a mix of other forms of thinking to make understanding a situation more intelligible. Reflexive practice largely turns to narrative reasoning because it is through stories that we share our ideas, understanding much more than through scientific reasoning.

### **Blending knowledge and reasoning from physiotherapy and occupational therapy for shared care**

In our example of Albert's rehabilitation journey following a stroke so far, we have separated our description of physiotherapy and occupational knowledge and reasoning. Although useful to illustrate the distinct aspects of these professions, this separation underrepresents the common and integrated nature of physiotherapy and occupational therapy practice in many areas of healthcare. By using the case study of Albert we have revealed that occupational therapists and physiotherapists use many types

of knowledge and reasoning to manage their clinical work, be a team player, function as a member of a multidisciplinary organization and represent clients. Functioning in a team requires taking part in team development and being able to let go or accept particular roles (Antoniadis and Videlock 1991, Rush and Sheldon 1996). This is particularly relevant when client-focused teamwork progresses from multidisciplinary (separate disciplinary treatment plans) to interdisciplinary (shared plan and monitoring of progress) or even transdisciplinary (crossing professional boundaries) modes of service delivery, particularly in small rural organizations that have limited resources.

Experience from our work as health professionals indicates, and as evident in the content of this chapter, physiotherapists and occupational therapists have much in common in relation to knowledge and ways of reasoning. As we focus on Albert and his story we can see that in practice this shared perspective supports a team approach to his management.

During his rehabilitation Albert received input from both the physiotherapist and occupational therapist. Formal team meetings were held in which these professionals shared the goals with each other and with the rest of the team, including social workers, medical practitioners and speech pathologists. The physiotherapist and occupational therapist agreed on goals of rehabilitation that focused on strategies to recover optimal function rather than on accommodating to his existing level of function. The physiotherapist and occupational therapist discussed Albert's needs at home and the strategies they were both using to achieve the goal of returning home. They organized joint therapy sessions where they could both work on transfers and mobility. They also negotiated the timing of their individual therapies to account for the goals they were trying to work towards on a particular day to avoid Albert experiencing excessive fatigue.

### **Sources of knowledge and strategies to enhance professional development**

In physiotherapy and occupational therapy different sources of knowledge have been identified in the literature, including knowledge from reading and professional education, and from work colleagues, mentors, personal experience and critical reflection on one's clinical experience (Beeston and Simons 1996, Jensen 2000, Resnik and Jensen 2003). Patients are also

considered 'a powerful, central, valued source of clinical knowledge' (Jensen 2000: 37).

Increasingly, the framework of evidence-based practice and clinical practice guidelines are being advocated as a primary means of accessing and applying knowledge. In the case of healthcare professionals working with Albert, resources such as Clinical Guidelines for Acute Stroke Management (National Stroke Foundation 2007) have been developed. This knowledge is formal and has a research base that provides an evidence-base for intervention (Woodson 2008).

In spite of this strong emphasis on research-based practice in the literature, findings from research studies are not readily integrated into clinical practice (Estabrooks 2001, Jette et al. 2003). Whereas knowledge acquired by health professionals at university represents a large body of knowledge brought to clinical practice, Smith found that much of the propositional knowledge subsequently gained was acquired sporadically and opportunistically when required in specific clinical instances. Specific effort was required by practitioners to increase their propositional knowledge following graduation, as they perceived that the nature of their workload did not allow time for building propositional knowledge during work hours. As a result, practitioners may seek out more contextually relevant sources of knowledge, such as other health professionals, particularly where insufficient time is available to engage in evidence-based practice (Jette et al. 2003).

Context-embedded practitioner knowledge, or professional craft knowledge, is knowledge that arises from the processing of experience. Non-propositional knowledge is contextual in nature, having been particularly constructed to enable practitioners to work in their particular work situations (Hedberg and Larrson 2004). This knowledge is largely related to practical skills, some of which are learned during academic education and others during clinical experience, for instance, how to physically facilitate an action, simplify a task, or move a wheelchair in order to access a bathtub. Smith found that non-propositional knowledge was derived from individual practitioners' experiences of success and failure and responses to decisions they had made in the past. Non-propositional knowledge was also acquired by asking other health professionals for knowledge and advice, observing and being taught or shown by others the usual ways of practice in context, and accessing written protocols that articulate ways of practice. Eraut (2004: 254), with particular reference to the notion of the social contexts of practice, notes that:

The episodic memories of individuals are influenced both by the semiconscious socialization process through which norms, values, perspectives and interpretations of events are shaped by local workplace culture, and by their

conscious learning from others, and with others, as they engage in cooperative work and tackle challenging tasks.

This idea has been developed by Lave and Wenger (1991), who put forward the notion of communities of practice, and emphasized that learning in practice is a 'matter of acculturation, of joining a community of practice, rather than the application of skills or principles which operate independently of social context' (Cope 2000: 851). Learning occurs in a particular situation and therefore the contextual elements of the situation are acquired at the same time as other knowledge (Higgs 2004). Non-propositional knowledge is thus more appropriately considered as constructed rather than acquired. Higgs, Fish and Rothwell (2004: 93) proposed a view of knowledge that arises from a dynamic process of striving to construct or make sense of the world; of taking understandings, insights, observations and experiences and exploring them in relation to existing knowledge, in terms of the perceived realities of experience and other forms of evidence, such as logic and peer review, in order to construct a view of reality that makes sense to the knowledge maker.

Multiple sources of knowledge become blended, often through narrative reasoning and reflexive critique of this knowledge, resulting in a body of knowledge that uniquely informs an individual's practice. When used ethically, knowledge leads to 'good' decisions with the client.

So far, we have discussed experienced therapists who have gained knowledge and clinical reasoning through working with people such as Albert. New graduates may feel that they lack competence in different areas through lack of experience, contacts and/or knowledge (Lee and Mackenzie 2003, Steenbergen and Mackenzie 2004, Tryssenaar and Perkins 2001). Neistadt (1996) noted that once a new graduate became more confident in the clinical decision-making process, they were more confident in the services they provided to clients. They also experienced improved job satisfaction because they had greater understanding of the complexity of their work (Neistadt 1996). Post graduation strategies to help graduates achieve a state of competence in practice and increase practitioner confidence include continuing education courses and providing mentors (Tryssenaar and Perkins 2001).

Continuing professional development (CPD) for healthcare professionals involves life-long learning to improve and maintain competencies and standards of care (Hunter and Nicol 2002, Shillitoe 2002) to provide efficacious evidence-based intervention and to maximize quality of life (Sackett 1996). Findings of a recent systematic review of 32 studies (30 RCTs) demonstrated that lectures alone (that is, passive dissemination of information) were not sufficient to change clinical practice, but that interactive workshops had a moderately large effect (O'Brien et al. 2006). The effect size reported was



0.84 (95 per cent CI 0.51 to 1.17). Interactive learning is an important strategy used in adult learning, and has been used in continuing education (Schoo 2008) because allied health professionals prefer the format (Stagnitti 2005). Kirkpatrick (1994) described four levels of CE effect evaluation and Gusky (2000) five, and Schoo (2008) provided evidence of transfer of knowledge and skills (level two) and potential implementation of learning among the rural participants (level three). Although measuring improved clinical practice and patient outcomes was outside the scope of the latter study, some qualitative comments made reference to this level.

Principles that enhance the success of adult learning include perceived relevance, founded on and added to previous experience; active involvement and sharing; a problem-focus, fostering responsibility for self-learning; mixing activities and times for reflection or evaluation; and engendering trust and respect (Spencer and Jordan 1999). Extending one's knowledge also includes reflection upon one's practice, as well as perceiving, feeling or adapting one's behaviour to a situation (Mattingly and Fleming 1994).

## In conclusion

Occupational therapists and physiotherapists share part of their knowledge, think with the same forms, and are in a good position to enhance their knowledge, both propositional and non-propositional, by working together. Moreover, they share the same context of practice where they face similar problems. These include difficulties in implementing evidence-based practice because of workload (and perhaps poor recognition from their hierarchy); the necessity of discussing formal knowledge learned in continuing education to change practice; and the need to reflect upon practice to enhance their competence. They also face the challenge of making their knowledge explicit so that it can be formalized and transmitted, so that they might be recognized as experts.

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# 11 Using knowledge in the practice of dealing with addiction: an ideal worth aiming for

Peter Miller

Addiction, excessive consumptions, Alcohol and Other Drug (AOD) problems, dependence: whatever the name used to describe the range of behaviours involved when people become almost solely focused on a single behaviour or substance, the behaviours span all levels of society and touch virtually every caring profession. Addiction-related practice and theory constitute a unique and fascinating area of theory and practice because of its truly pan-disciplinary nature. The behaviour is impacted upon, and impacts on, economic factors, political imperatives, social factors (gender, class and ethnicity), psychological factors, physiology, psychopharmacology, neuropsychology and, according to some, even genetics. The convergence of this wide range of bodies and types of knowledge means that there is great debate within the different sectors and many issues of professional competition for dominance. It is one of the few areas in modern society where most policy works in direct opposition to the vast body of research and expert opinion.

Despite a massive evidence base, the most popular conceptions of AOD use still revolve around 'addiction', the disease model and rational choice. All of these conceptualizations fail to explain the majority of AOD problems and have been roundly disproved, yet their influence remains. This chapter will briefly cover some of the major debates in the field and demonstrate how different bodies of knowledge (combined with professional self-interest) have contributed to the field, ending with a discussion of where clinical practice and research are heading in the search for more effective interventions for addiction-related problems.